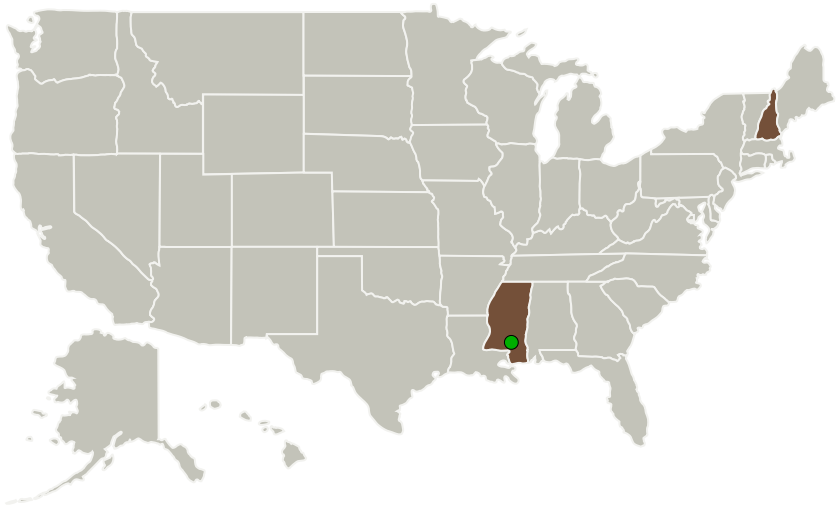
Building a Rice Decision Support System to Support Global Food Security and Commodity Markets, Phase II

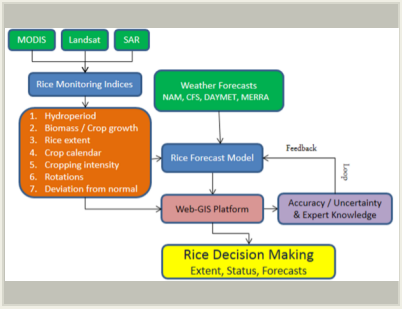
Completed Technology Project (2014 - 2017)

Project Introduction

Agriculture faces major challenges in the decades to come due to increasing resource pressures, severe weather and climate change, population growth and shifting diets, and economic development. Rice is one of the most important crops globally considering its role in the Earth system, food security, and providing livelihoods with more than 1 billion people depending on rice. Tools and systems that can help monitor production and support risk management are needed for decision making by many end users and governments. Futures are a tool used to manage or hedge risk, reduce volatility, improve food security, and maximize efficiency and profit on the open market. Currently, the rice futures market has little high quality and timely information available to make strategic or application specific decisions to reduce risk and maximize profit. The global rice futures market is thinly traded causing extreme price fluctuation orders of magnitude. The innovation of Rice Decision Support System (RiceDSS) is the seamless fusion of operational satellite remote sensing monitoring metrics of rice agriculture, rice yield modeling, and weather forecasts to generate near real time information on rice extent, growth stages, production forecasts and statistical uncertainty. RiceDSS uses a state-of-the-art open source framework with advanced automation routines, web-GIS, and mobile technologies to support visualization and delivery of information to support global food security programs and commodity markets.

Primary U.S. Work Locations and Key Partners





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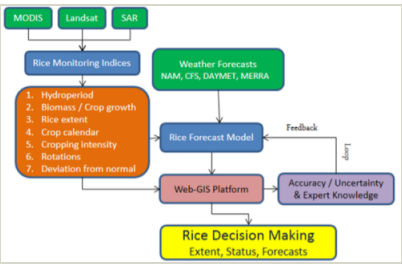
Organizations Performing Work	Role	Type	Location
Applied Geosolutions, LLC	Lead Organization	Industry	Durham, New Hampshire
Stennis Space Center(SSC)	Supporting Organization	NASA Center	Stennis Space Center, Mississippi

Primary U.S. Work Locations	
Mississippi	New Hampshire

Images



Briefing Chart Image
Building a Rice Decision Support System to Support Global Food Security and Commodity Markets, Phase II
(https://techport.nasa.gov/image/125943)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Applied Geosolutions, LLC

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
William Salas

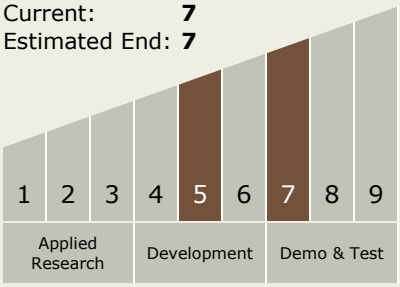
Co-Investigator:
William Salas

Building a Rice Decision Support System to Support Global Food Security and Commodity Markets, Phase II

Completed Technology Project (2014 - 2017)

Technology Maturity (TRL)

Start: **5**
Current: **7**
Estimated End: **7**



Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - TX11.2 Modeling
    - TX11.2.4 Science Modeling

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System